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SOUTHERN FORESTRY NOTES

Southern Forest Experiment Station
New Orleans, Louisiana

Forest Service, U. S. Department of Agriculture



1946 PULPWOOD PRODUCTION

Pulpwood production in Southern Station territory in 1946 was 4,123,549 cords (see table). In comparison, 1,566,000 cords were produced in 1936. The largest increase was in Mississippi.

State	Pine	Hardwood	Total
Std. cords, bark included			
Alabama	731,164	25,242	756,406
Arkansas	511,530	65,617	577,147
Louisiana	766,063	20,901	786,964
Mississippi	983,908	254,251	1,238,159
Oklahoma	13,341	0	13,341
Tennessee	30,699	104,847	135,546
Texas	594,321	21,665	615,986
Total	3,631,026	492,523	4,123,549

The 1946 wood went to 24 mills in Station territory and to 8 outside; 88% of the wood was pine, 12% was hardwood. One-third moved in interstate commerce, but the greater part was cut within 150 miles of the mills it was delivered to.

Expansion of the pulp and paper industry in the South began about 1936 and is still going on. From 1936 to 1946, pulping capacity increased 281% in Station territory, and an active search for new mill sites continues. New units are under construction at Childersburg, Ala., and Natchez, Miss. Capacity of the 26 existing and proposed mills will be 8,111 tons of pulp daily. Of this, 68% will be sulphate capacity, 26% groundwood or other mechanical process, 4% semichemical, and 2% soda.

The capacity increase has pointed mostly toward pine. Interest is also strong in hardwoods, but so far the supply of hardwoods of pulpwood size has hardly been touched.--W. S. Stover.

LOBLOLLY SEEDLING SURVIVAL IN FOREST OPENINGS

Loblolly pine seedlings appear to live and grow well enough in forest openings 15 to 30 feet in diameter--about the size made by removing a mature pine--to give good reproduction under single-tree selective cutting on a short cycle on a good site.

Studies to determine the effect of forest shade and openings on loblolly seedling survival and growth were begun early in 1941 on the Crossett Experimental Forest in south Arkansas. The study area, a flatwoods forest of loblolly and shortleaf pine mixed with poor-quality hardwoods, typifies a large area of similarly favorable sites in south Arkansas and north Louisiana. The stand averages 6 M board feet per acre, International $\frac{1}{4}$ -inch rule. Observations, which are continuing, began with 1-year-old seedlings from the heavy seed crop of 1939. The table gives the number per 1/1000-acre test plot in 1941 and survival and heights in 1944, when the seedlings were 5 years old. As even badly suppressed loblolly seedlings respond promptly and vigorously to release, survival is often more important than rapid growth.

Seedlings	Under canopy, with side opening--			Canopy opening diameter--		
	Negl.	Small	Large	15-30'	43-61'	74'+
1 year old:						
No. per plot	7	14	17	12	12	19
5 years old:						
Alive	6%	33%	58%	66%	75%	79%
Tallest per plot	1.0'	2.0'	3.4'	3.4'	5.0'	8.1'

Basis: 214 milacre sample plots.

Under a canopy and with negligible or small side openings, seedlings showed poor survival and development. Conversely, in openings at least 43 feet in diameter, both survival and growth were more than adequate to insure restocking. Seedlings under a canopy but with a large side opening lived and grew nearly as well as those under small canopy openings.--W. G. Wahlenberg.

KEEP SMALL TREES GROWING

Fast-growing young pine trees are one of the best-paying investments a southern landowner can have.

A pulpwood tree that grows from 4 to 5 inches in diameter increases 114% in volume and value. If it grows 1 inch in 3 years, which loblolly pine will do if properly spaced, it earns its owner 38% interest per year. At the same rate of growth, it earns 23% yearly in growing from 6 to 7 inches, 12% in growing from 8 to 9 inches, and 9% in growing from 10 to 11 inches.

Sawlog trees that increase from 9 to 10 inches in 3 years earn 46% annually. They earn 23% annually in growing from 11 to 12 inches, 12% a year in growing from 15 to 16 inches.

These figures assume stumpage values increasing from \$10 per M b.f., Doyle rule, for a 9-inch tree to \$25 for a 24-inch tree. As the tree gets bigger, the proportion of new growth to total volume is less than in small trees, but large trees yield higher-quality products and cost less per M b.f. to log. Thus, when the tree grows from 18 to 19 inches, annual interest is still 8%, and 5% in trees growing from 23 to 24 inches.

Unless the landowner has other investments which will pay better rates, he should not cut small trees except to improve the stand.--R. R. Reynolds and S. F. Clark.

KEEP LATERAL ROOTS ON LONGLEAF PLANTING STOCK

If planted longleaf seedlings are to make their best survival and growth, the lateral roots must be kept on when the seedlings are lifted in the nursery.

In January 1941, 200 longleaf seedlings, half with lateral roots nearly intact and half with

them broken off in lifting, were planted in alternate 10-tree rows on a plot in central Louisiana. Five months later, 93 of the trees with laterals were alive, as compared to 41 of those without laterals. In July 1947, the survival was 58 and 20--still in favor of the trees with good lateral roots.

The beneficial effect of a good lateral root system on early height growth was at least as great as on survival. In July 1947, 32 of the 58 surviving trees with good lateral roots were out of the grass. Of these, 10 were under 5 feet in height, 9 were from 5 to 9 feet high, 11 more were 10 to 14 feet high, and 2 were 15 feet high. The average height of all 58 was 4.5 feet. Of the 20 survivors in the group without good lateral roots, only 4 were making active height growth. One was 10 feet high, the other 3 between 5 and 10 feet. Average height of all 20 was 1.7 feet.

These results show the need for careful lifting in the nursery. They also suggest that grades for longleaf planting stock should take into account the lateral roots as well as the length of the tap root.--H. J. Derr.

RECENT PUBLICATIONS BY STAFF MEMBERS

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- Griswold, N. B., and McKnight, J. S. Alabama's mine-wood market. Ala. Conserv., Dec. 1947, p. 8.
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